

### **REMARKS**

Applicants acknowledge, with thanks, receipt of the Office Action mailed June 29, 2005. Claims 1-15, 20-30, and 34 are pending in the instant application. New claims 35-40 have been added to more accurately define that which Applicants believe to be the invention. No new matter has been added to the application.

### **NON-ART MATTERS**

Applicants have amended the specification to reflect the proper "SEQ ID NO:" as requested by the Examiner. In accordance with the requirements set forth in 37 C.F.R. §§1.821-1.825, Applicants respectfully submit the following statement regarding Sequence Listings:

I hereby state that the submission, filed in accordance with 37 C.F.R. §1.821(g), herein does not include new matter or matter which goes beyond the disclosure in the international application. The Sequence Listing is supported in the original application at page 34, lines 24, 25, 28, and 29, page 35, line 5, and page 36, lines 11 and 12.

### **ART MATTERS**

The Examiner has rejected claims 1-15, 20-30, and claim 34 as being anticipated by U.S. Patent No. 5,945,577 to Stice et al. Applicants respectfully traverse.

The Stice reference explicitly states the nuclear transfer of a donor nucleus into an enucleated oocyte. (Col. 1, lines 7-8; Col. 5, line 21; Col. 5, line 38; Col. 5, line 47). Stice further provides great detail (see Col. 9, lines 30-55) as to the method for carrying out the required enucleation. Thus, it is clear from the context of Stice, as well as the explicit language contained therein, that transfer of a donor nucleus into the oocyte occurs only after the oocyte has been enucleated. [emphasis added].

The subject application, as indicated in claims 1-15, 20-30, and 34-40, is explicit that a donor cell or donor nucleus is introduced into a recipient cell before the recipient cell is enucleated. This allows a period of reprogramming to occur, and only after this period has expired is the original nucleus or nuclei DNA removed. Thus, Stice clearly teaches away from the method claimed in the instant application, as the nuclear transfer method disclosed and used by Stice would be negatively affected. Furthermore, no where in Stice is it suggested or disclosed that the recipient cell nucleus or nuclear DNA is removed after the introduction of the donor cell or donor nucleus.

In addition, it is appreciated by those skilled in the art that the use of nuclear transfer for cell programming in animals are often inefficient. As the Applicants discuss at page 2, lines 14-21, nuclear addition, employed by the instant application, is less disruptive than the nuclear transfer method of Stice. The donor nucleus is placed into an intact cell, not one in which the recipient nucleus has been removed. Such a procedure exposes the donor nucleus to reprogramming factors, which are not available in the recipient cell of Stice. The Applicants further distinguish the reprogramming factors associated with the metaphase plate, cell nucleus, chromatin, chromosomes, or DNA, or with the cytoplasmic components of the recipient cell which are not present in an enucleated cell. The instant application allows the donor nucleus to be exposed to these factors with minimal cell function disruption. According to Stice, such a disruption is inherent, as the recipient nucleus has been removed, thereby removing the reprogramming factors and inhibiting normal cell functions.

Accordingly, the instant invention allows for full or partial reprogramming of a recipient cell, via the addition of nuclear material. Stice teaches away from this aspect of the present invention. According to Stice, there is no means for partial reprogramming, as any factors that might facilitate a partial reprogramming have been forcibly removed prior to the transfer of the donor nucleus. Thus, Applicants respectfully submit that the methods as claimed in the instant application and that which is disclosed by Stice are dissimilar and distinct. Furthermore, Applicants respectfully submit that not only are the methods disclosed by the respective inventions different, but the resulting cells from the methods are also distinct. For example, the instant application is capable of application to genetically engineered cells such that the desired aspects of that cell are capable of being retained through the nuclear addition method of the instant application. In contrast, Stice requires that these factors be removed, the cell enucleated, prior to transfer of the donor nucleus, thereby reducing or eliminating any retention of the desired trait in the recipient cell. Thus, in addition to teaching away from the subject invention, Stice is directed to an entirely different method with different results. It is apparent from the disclosure of Stice that the method employed by the Applicants was not considered, discussed, or used.

The Examiner has further rejected claims 24-29 as being anticipated by Munsie et al. (Reprod. Fertil Dev, 1998). Applicants respectfully traverse. Applicants respectfully submit that each of these rejected claims are dependent from claim 1, and for the reasons set forth above, with respect to the Stice reference, are patentably distinct over Munsie. As discussed above, the subject invention uses nuclear addition, whereby a donor nucleus or nuclei DNA is added to a recipient cell before any enucleation occurs. In contrast, both Munsie and Stice require that the recipient nucleus be removed prior to any transfer of nuclear material. The Applicants respectfully submit that such an action, as set forth by

Munsie and Stice, do not allow for partial reprogramming to occur, whereby the donor nuclear material is affected by the still present recipient nuclear material. Thus, neither the process nor the products used by Stice or Munsie are substantially identical to that which is taught in the instant application.

### CONCLUSION

In view of the foregoing, it is respectfully submitted that all present claims are patentably distinct and in condition for allowance thereof. Applicant respectfully requests that a timely Notice of Allowance be issued in this case. If the Examiner believes there are any further matters, which need to be discussed in order to expedite the prosecution of the present application, the Examiner is invited to contact the undersigned.

If there are any uncovered fees, or any overpayments, necessitated by the foregoing communication, please charge such fees to our Deposit Account No. 50-0902, referencing our Docket No. 78870-00004.

Respectfully submitted,

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Date: November 22, 2005